Perfect Forwarding Solutions

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Forwarding

- What is meant by "forwarding"?
  - Forwarding occurs when a function calls another function and passes some or all of its arguments in the call
- What is meant by "perfect forwarding"?
  - Perfect forwarding occurs when the forwarded arguments preserve their properties

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std::forward()

- What does std::forward() do?
  - It casts its argument to rvalue reference, unless the argument is an lvalue reference
- What is the result of calling std::forward() when its argument is
  - lvalue - the argument is cast to an rvalue reference
  - lvalue reference - the result is an lvalue reference (rvalue reference to lvalue reference is collapsed to an lvalue reference)
  - rvalue reference - the result is an rvalue reference (rvalue reference to rvalue reference is collapsed to an rvalue reference)

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std::forward()

- In the previous set of exercises, you wrote a program which demonstrated a forwarding reference
- Extend this program by adding a function g() which takes an lvalue reference and prints out its argument type. Overload g() with a version that takes an rvalue reference
- Modify the function with the forwarding reference so that it calls the appropriate overload of g() for its argument
- Test your program and check that it gives the expected results

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